



NGA DNC-to-ENC Conversion

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N A T I O N A L G E O S P A T I A L **NGA** I N T E L L I G E N C E A G E N C Y

Coordinating efforts in the U.S

- The Ocean and Coastal Mapping Integration Act 2009 (P.L. 111-11, Title XII, Subtitle B):
 - Congress mandated mapping coordination between federal agencies
 - NOAA coordinates with federal, state, and local partners

U.S. Charting Responsibilities

U.S. Department of Commerce

- NOAA – Hydrography, National Shoreline, Tides and Currents, Nautical Charts and Coast Pilot for U.S. Waters including the US EEZ

U.S. Department of Defense

- Army Corps of Engineers – Dredging and maintenance of federal navigational channels and inland navigable waterways
- NAVOCEANO – Hydrographic surveying outside of the US EEZ
- National Geospatial-Intelligence Agency (NGA) – nautical charting outside the US EEZ and publication of Notice to Mariners

And other federal agencies...



ENC / DNC Difference

ENC

- S-57 Format (Structure, Features and Attributes)
- Object oriented data model
- S-52 symbology specification
- Basic unit is Cell
- 2 layers: Skin of the Earth and everything else
- Must be transformed into System ENC for use in ECDIS
- Greater breadth
- Purely navigational chart

DNC

- Vector Product Format (VPF) based on Feature and Attribute Coding Catalog (FACC)
- Table based georelational data model
- Uses Geosym for symbology
- Basic unit is Library
- 12 thematic layers
- Can be directly read by ECDIS-N
- Greater depth
- Provide a suite of other military information



Implementation advantages

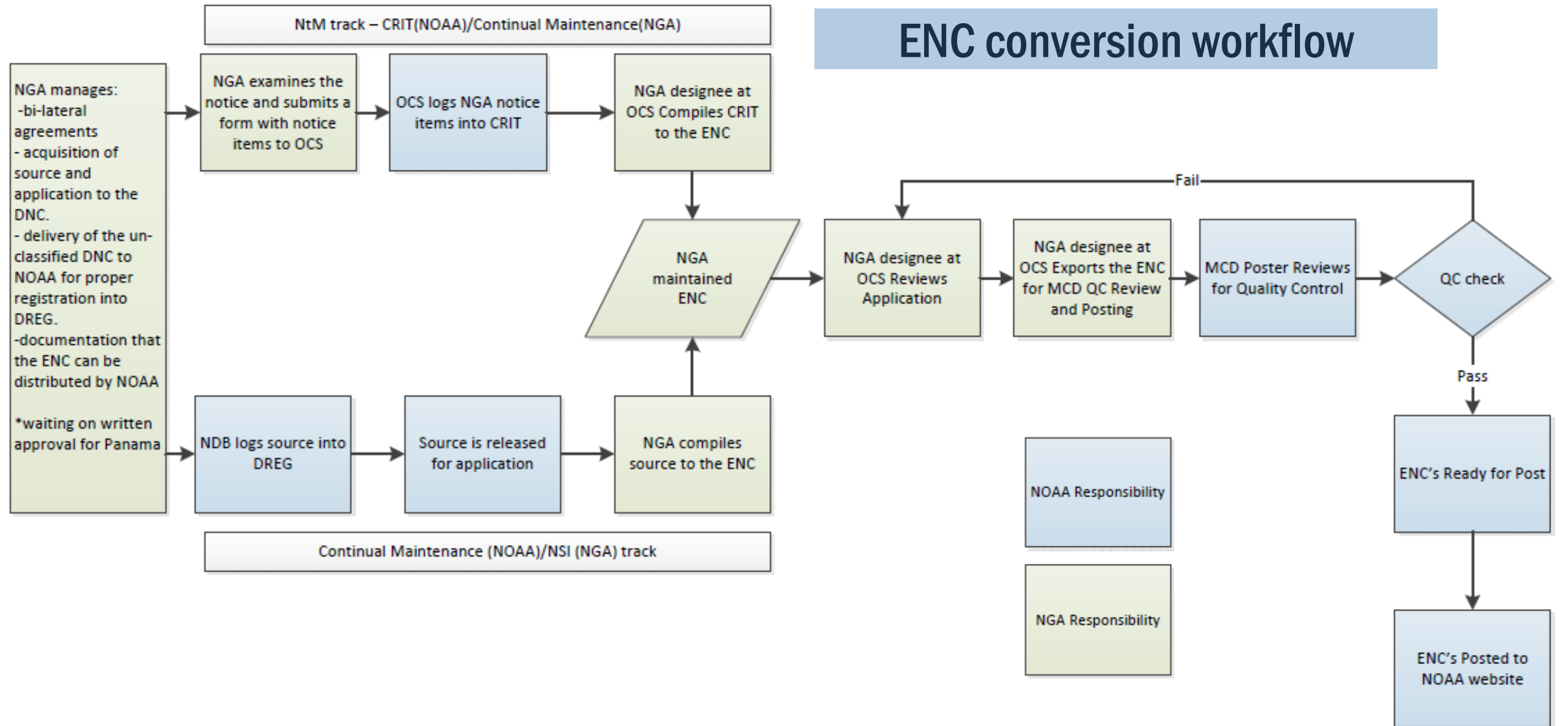
- In agreement with the international specification and allow NGA to be a true player in the international hydrographic arena
- To make it easier for NGA to share data with other international partners
- To make co-production with our international partners more a reality
- To allow the Maritime Safety Office to meet the IMO's regulations for the parts of the world where NGA is the prime charting authority
- Improved quality and currency of Maritime Safety Information
- Improved interoperability for users and data providers



DNC ® conversion to ENC

- Production Plan:
 - Fulfill international obligations in accordance with WEND Principles (IHO TR K 2.19)
 - Create ENCs in areas where NGA is the Prime Charting Authority
 - Partner with NOAA
 - Leverage NOAA's expertise in ENC production and its production system
 - NIS Platform: ArcGIS 10.6.1 with Maritime: Charting extension
 - Sources: DNC® libraries & others
 - Method: manual, i.e. copy and paste
 - ENC cells fully compliant with IHO S-57





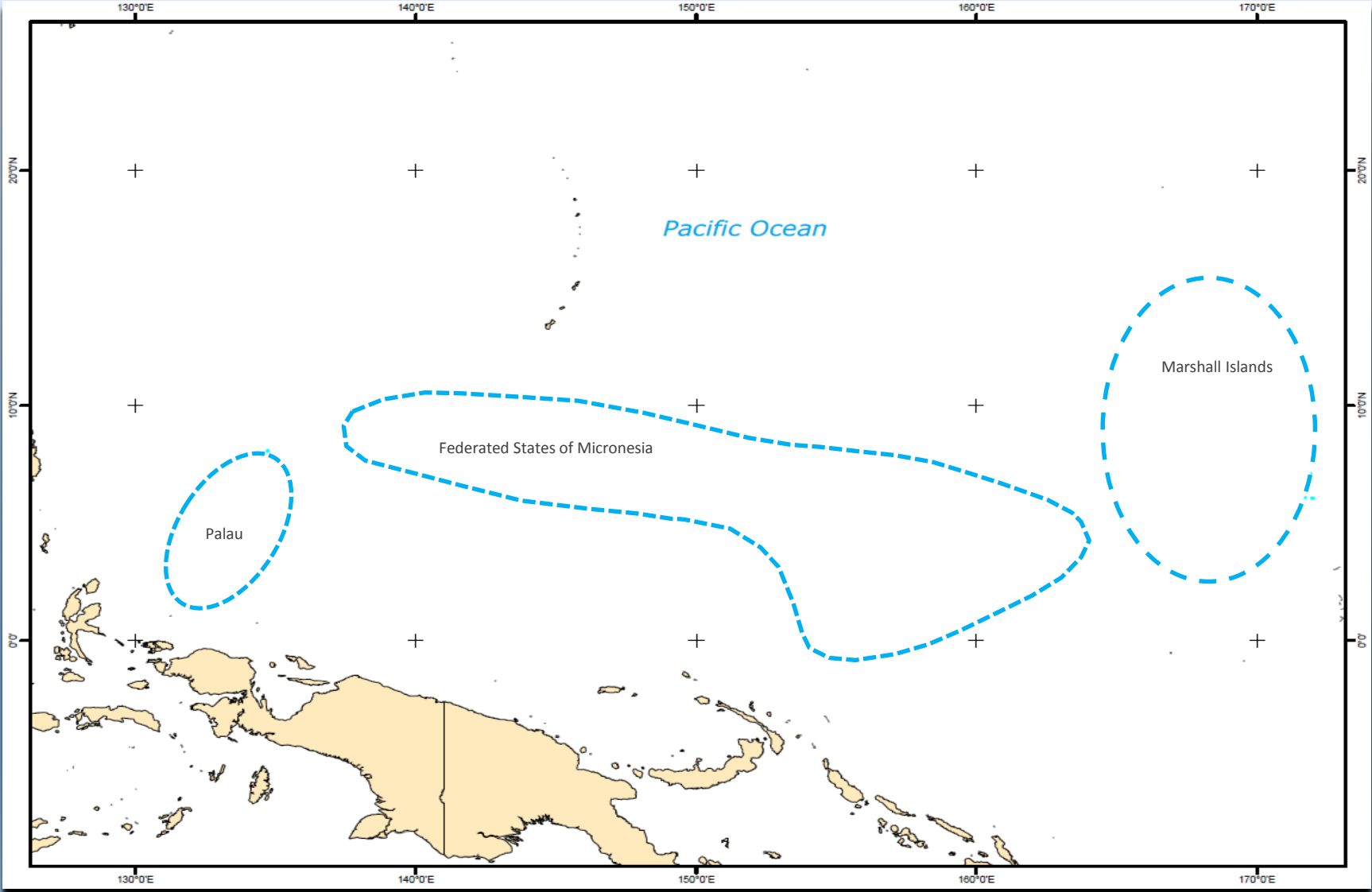
NGA as the charting authority for these areas

- Costa Rica
 - Dominican Republic
 - El Salvador
 - Federated States of Micronesia
 - Guatemala
 - Honduras
 - Haiti
 - Marshall Islands
 - Nicaragua
 - Panama
 - Palau
- Semi-authoritative
- Bahamas
 - Antarctica

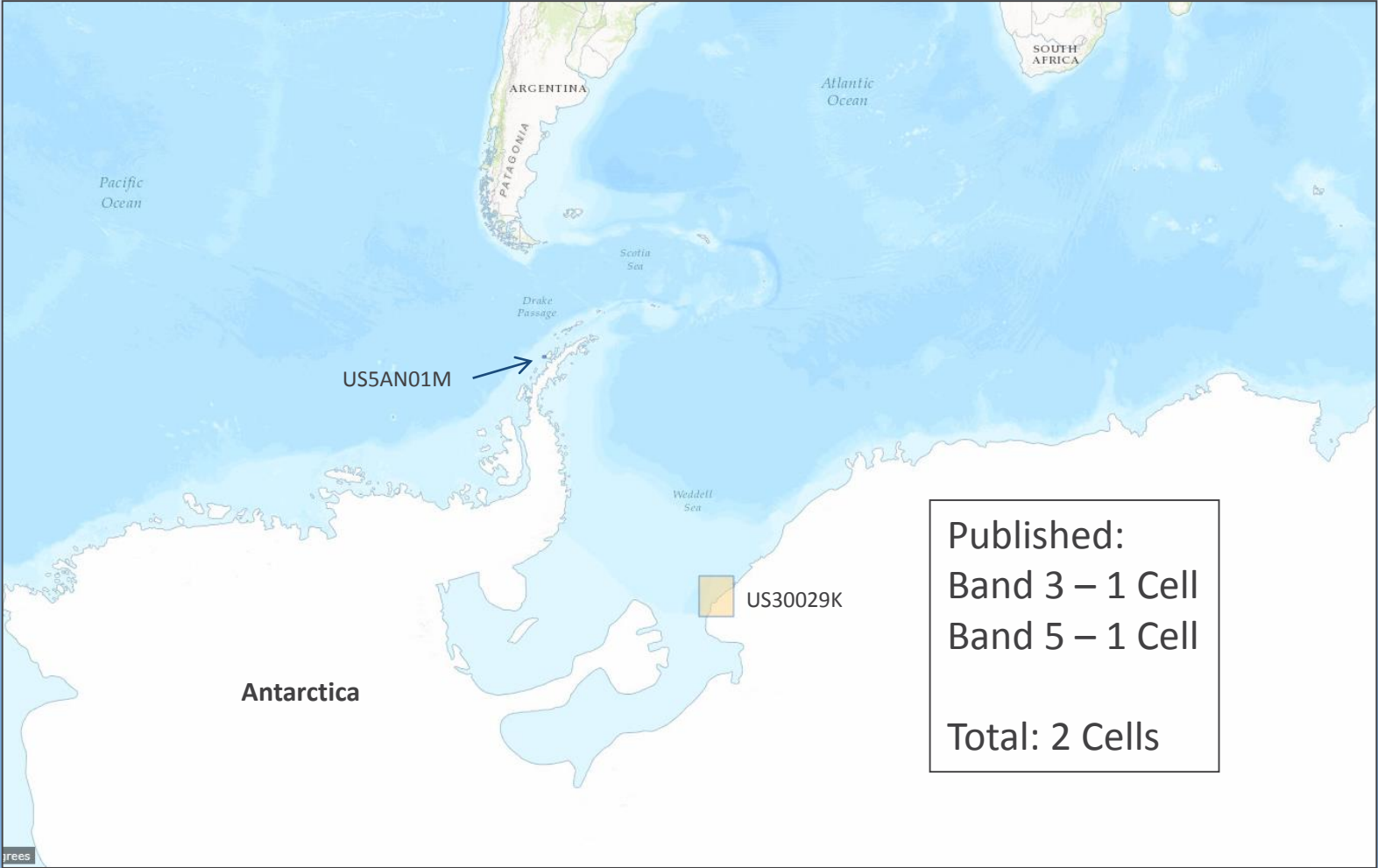
Charted countries (in blue) in Central America

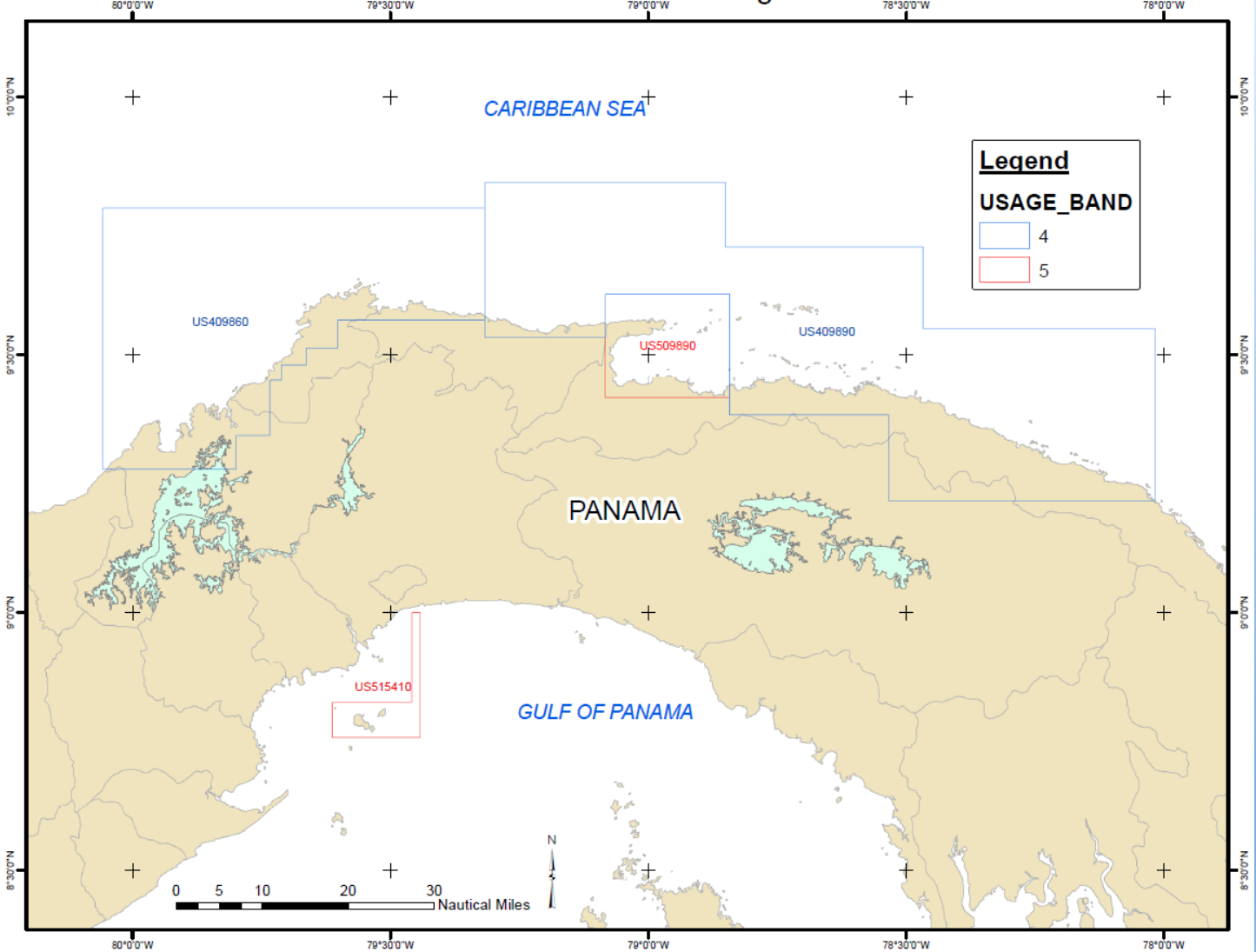


Charted countries (dashed line) in Pacific



Antarctica ENC Coverage





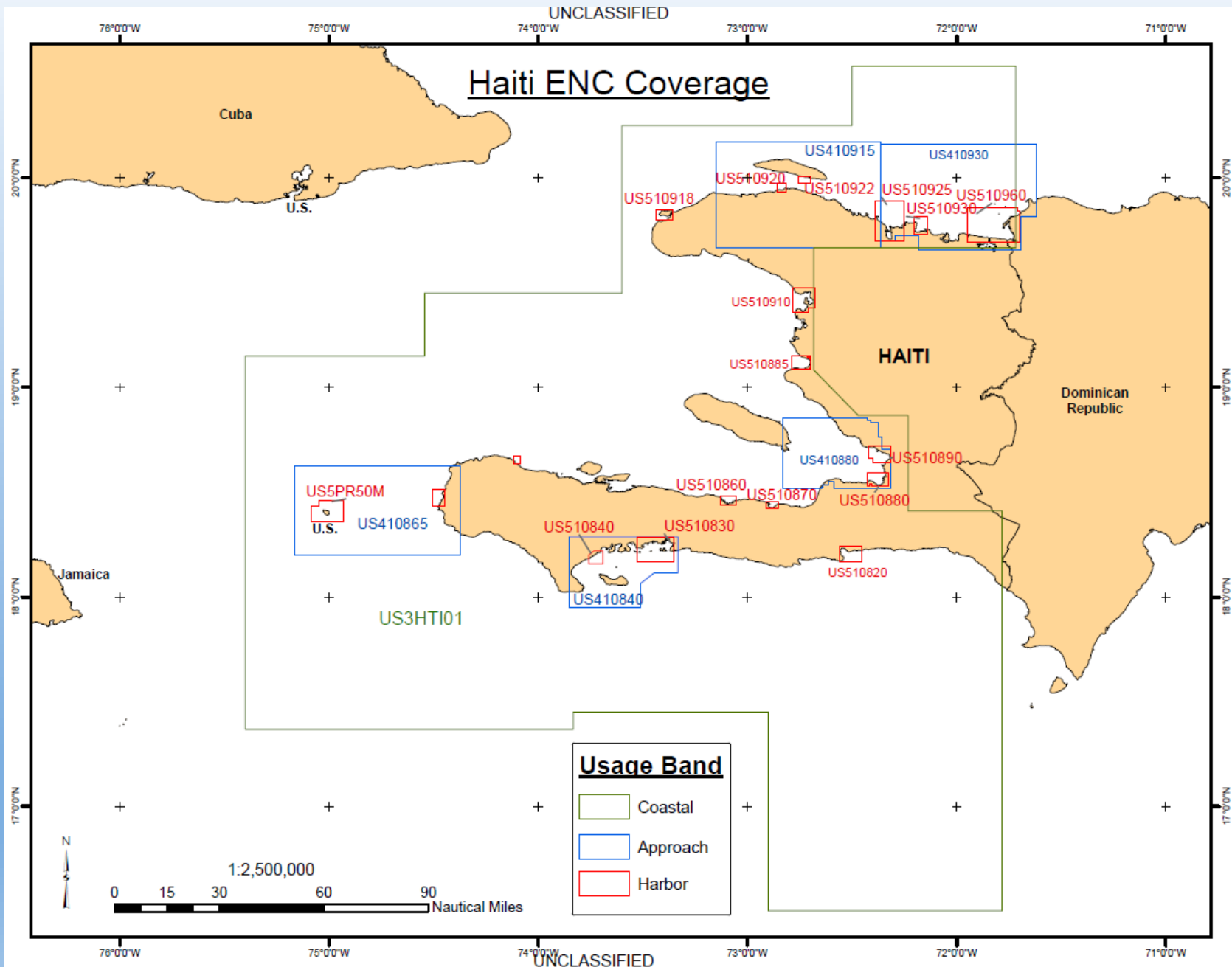
Panama ENC Coverage

Published:
Band 4 – 2 Cells
Band 5 – 2 Cells

Total: 4 Cells

Note: 2 Cells cancelled and 1 Cell coverage reduced due to the release of PCA-produced ENCs





Haiti ENC Coverage

Published:

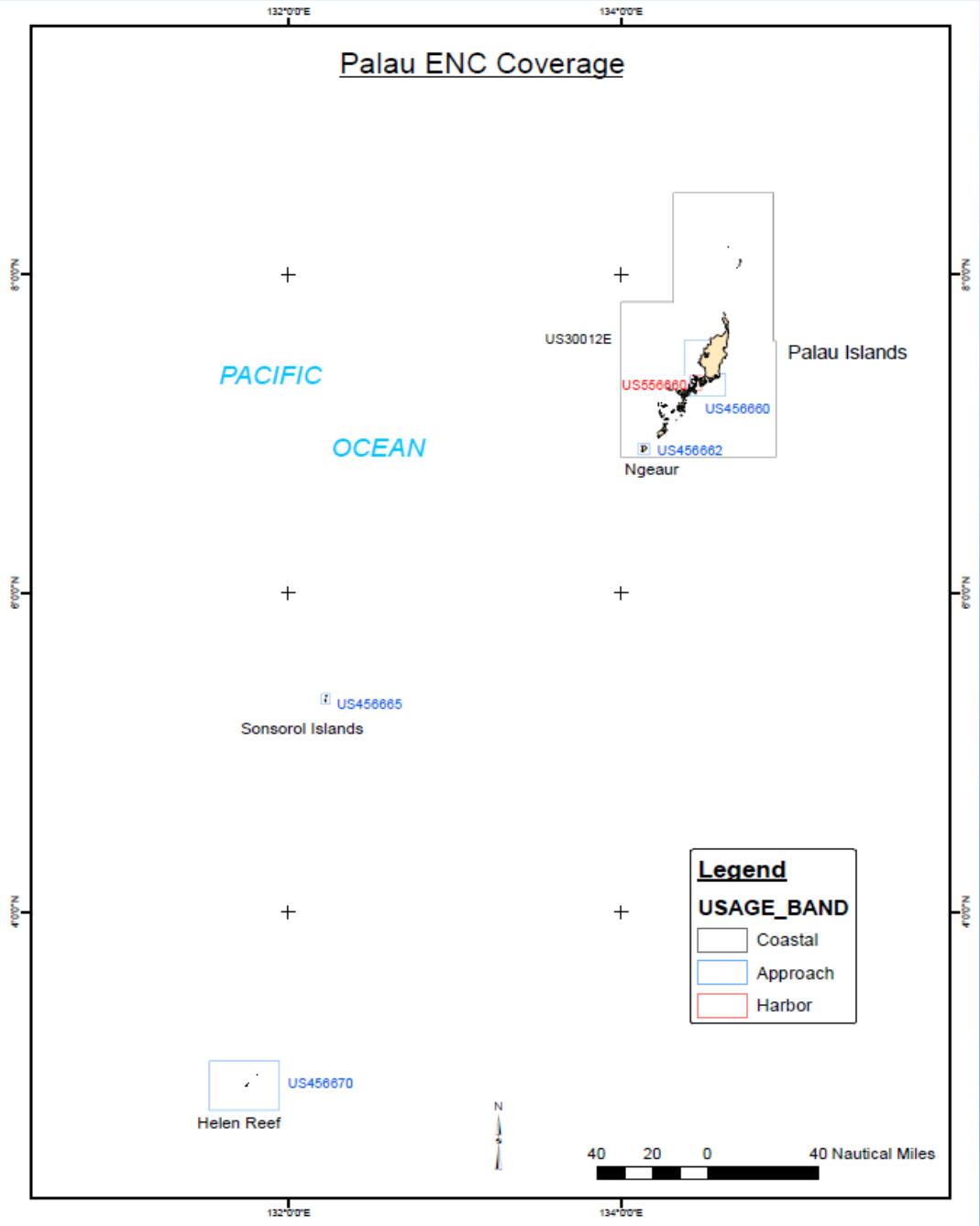
Band 3 – 1 cell

Band 4 – 5 Cells

Band 5 – 15 Cells

Total : 21 Cells





Palau ENC Coverage

Published:

- Band 3 – 1 Cells
- Band 4 – 4 Cells
- Band 5 – 1 Cell

Total: 6 Cells

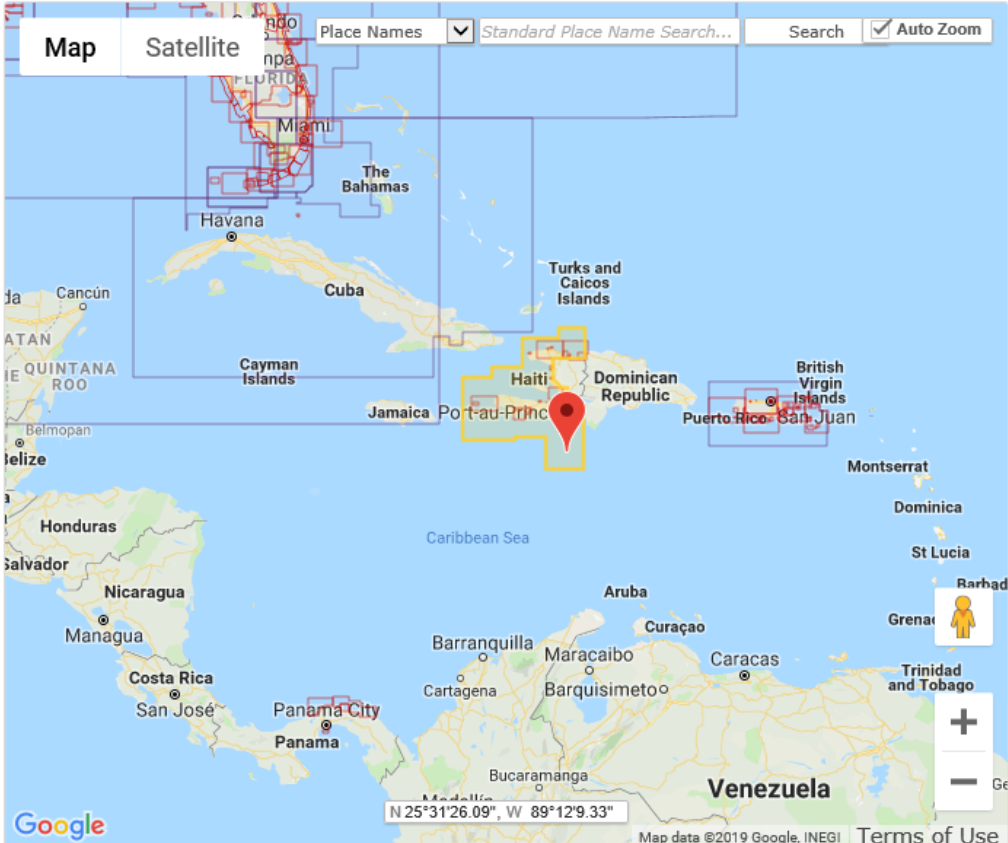
Distribution – NOAA interactive catalog

HOMECHARTSPUBLICATIONSDATALEARNCUSTOMER SERVICEABOUT US

Paper Charts (RNC & PDF)Electronic Charts (ENC)Coast PilotHelp

MapSatellite

Place Names▼Standard Place Name Search...SearchAuto Zoom



GoogleMap data ©2019 Google, INEGITerms of Use

Available Product Information

NOAA ENCs (ENC):
Vector files of chart features and available in S-57 format.

NOAA ENCs support marine navigation by providing the official Electronic Navigational Chart used in ECDIS and in electronic charting systems.

NOAA ENCs are updated weekly with Notice to Mariner corrections.

Map Selection Information

Chart: US3HTI01

Title:	Haiti Coastal
RNC:	26100
Scale:	1:300,000
Edition:	1.0
Published:	3/26/2019

Available Products

ENC

The logo for the National Geospatial-Intelligence Agency (NGA). It features the letters "NGA" in a large, bold, sans-serif font. To the right of the letters is a circular seal containing a stylized globe with a grid of latitude and longitude lines, and the words "NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY" around the perimeter.

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Approved for public release, 19-878

